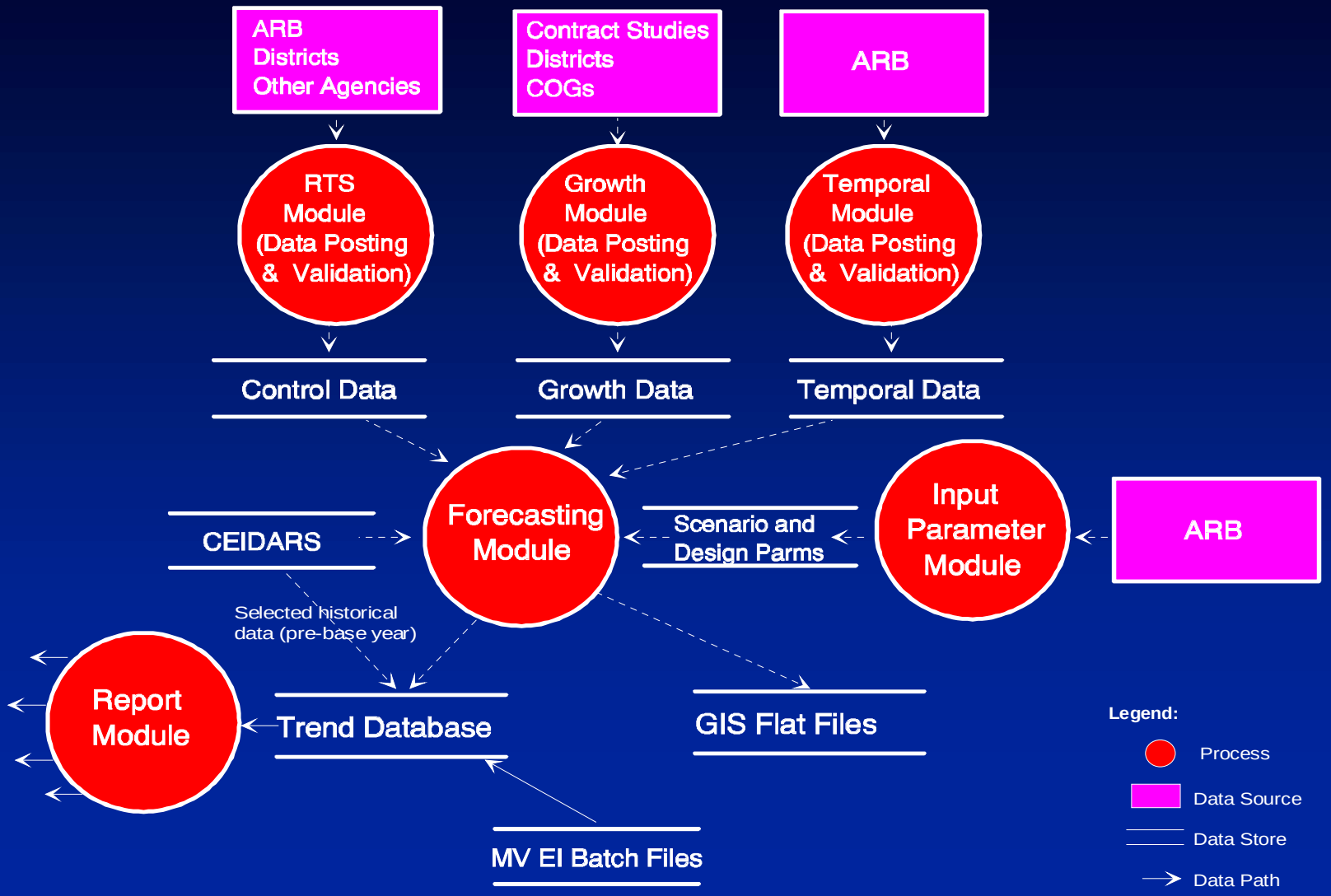
Introduction

- Changes in the forecasting business at ARB
  - Original forecasting programs operated on IBM 3270 mainframe in a RAMIS environment
  - Base year EI system redesigned in the 90's using the industry standard Oracle RDBMS environment--CEIDARS
  - Forecast system no longer compatible !!
  - Heightened interest in emission analyses to track SIP progress

Principal Design Objectives of the CEFS Project

- Compatibility with CEIDARS
- Improved forecasting logic needed
- Improved tracking of CAA emission reduction requirements (particularly for stationary sources)
- Improved temporal algorithms
- Day/Hour specific EI's for modeling
- Improved district accessibility to the system

CEFS Module View



Key Features of Algorithm Design

- Growth parameters linked to emission categories rather than broadly-defined growth categories
- Control rules linked to affected emission categories rather than broadly-defined control categories
  - Rule Effectiveness and Rule Penetration also supported

Key Features of Algorithm Design
(continued)

- Supports multiple rule/source application
- Complex region and category layering schemes for growth and control data
- Supports necessary switching of “adopted” and “proposed” control measures for SIP planning scenarios
- New “seasonal” and “day/hour” temporal algorithms for planning and modeling EI’s

Growth and Control Data Hierarchy

Region Selection:

1. District, Air Basin, County, Sub-County
2. District, Air Basin, County
3. Air Basin, County
4. County
5. Air Basin
6. District
7. California

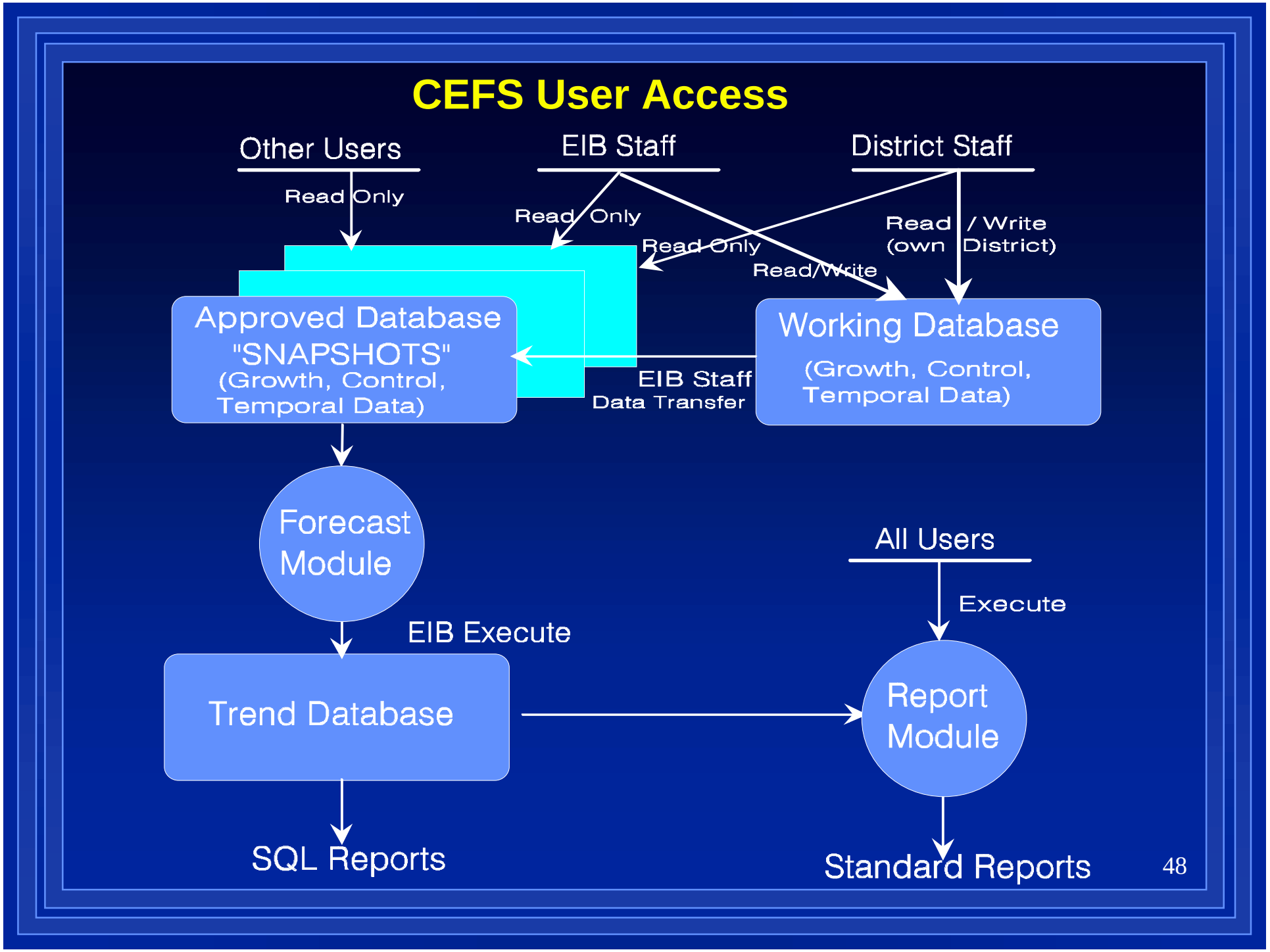
Category Selection:

1. Facility, SCC, SIC
2. Facility
3. Facility, EIC
4. SCC, SIC
5. SCC6, SIC
6. SCC3, SIC
7. SCC
8. SIC
9. EIC, SIC
10. EIC
11. CES
12. SIC2
13. Facility, EIC, SIC

Note: Currently, options 1,2,3, and 13 are only available with GIS forecast module

System Design -- Overall

- Database design using Oracle RDBMS
- “Working” and “Approved” database concepts
  - “Working” = Living
  - “Approved” = Snapshot
- Forecast processor algorithms written in C
- Reporting algorithms written in C and PL/SQL
- User access rights and security
- Modular design
- Remote access capability via telnet or modem


CEFS User Access
Other Users
EIB Staff
District Staff
Read Only
Read Only
Read Only
Read/Write
Read / Write
(own District)
Approved Database
"SNAPSHOTS"
(Growth, Control,
Temporal Data)
EIB Staff
Data Transfer
Working Database
(Growth, Control,
Temporal Data)
Forecast
Module
EIB Execute
All Users
Execute
Trend Database
Report
Module
SQL Reports
Standard Reports